AN INVESTIGATION OF THE RELATIONSHIP BETWEEN EMPATHY AND THE HUMAN MOVEMENT RESPONSE ON THE RORSCHACH TEST

by Ivan Stephen Bilash

Thesis presented to the School of Psychology and Education of the University of Ottawa as partial fulfillment of the requirements for the degree of Doctor of Philosophy

Ottawa, Canada, 1962

ACKNOWLEDGMENTS

This thesis was prepared under the supervision of Professor William Barry, Ph.D., and Professor Gilles Chagnon, M.Ps., of the School of Psychology and Education of the University of Ottawa. Their helpful suggestions have been of great value.

The writer would also like to express his gratitude to Reverend Father Raymond Shevenell, o.m.i., Ph.D., and Professor Raymond Vaillancourt, Ph.D., of the School of Psychology and Education of the University of Ottawa for their assistance in supplying the subjects.

CURRICULUM STUDIORUM

Ivan Stephen Bilash was born October 8, 1935, in Dauphin, Manitoba. He attended the University of Manitoba where he was graduated in April 1955 with the degree of Bachelor of Science. It was also from the same institution, in April 1959, that he received the Master of Arts degree in Psychology. The title of his thesis was: The Effects of Age on Factorially "Pure" Mental Abilities.

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

The human movement response on the Rorschach Test is considered by most investigators to be one of the most significant determinants for personality appraisal and numerous interpretations have been ascribed to it. Rorschach[1] himself attributed six different meanings to the M response either alone or in combination with other determinants. These six are intelligence, creativity, suggestibility, emotional stability, rapport, and empathy.

Only the first three of the foregoing interpretations of M have been studied to any extent experimentally, the others receiving only mild treatment.

The primary purpose of this study is to investigate the relationship between empathy and the human movement response on the Rorschach Test. Attention will be focussed on the difference in empathic ability between two groups varying in their quantitative production of human movement responses.

Chapter one presents a review of the literature. Toward the end of this chapter, empathy will be operationally defined and the hypothesis of this study set forth. Chapter

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1 H. Rorschach, Psychodiagnostics, New York, Grune and Stratton, 1942, 228 p.

two is concerned with the design which includes a description of the tools used, an elaboration of the sample employed, an outline of the procedure followed, and a discussion of the statistical techniques. The results and an elucidation of the nature of the empathic process will be found in Chapter three. The report closes with a brief statement of the conclusions and recommendations for further research.

CHAPTER I

REVIEW OF THE LITERATURE

The problem on hand is to investigate the difference in empathic ability between two groups of subjects differing in their quantitative production of human movement or M responses on the Rorschach test. The main emphasis is therefore on the M response whereas empathy is of secondary importance, being merely the particular interpretation of M to which this study is devoted.

However, because of the lack of agreement among psychologists regarding a definition of empathy, it was felt that the meaning of this construct should first be stipulated. For this reason, the first two sections will be devoted to a discussion of the definitions and measures of empathy to acquaint the reader with this concept. Sections 3 and 4 will respectively present theoretical and experimental evidence suggesting a relationship between the M response and empathic ability.

1. Definitions of Empathy.

Having invaded various areas of psychology, empathy, depending on its setting, has been ascribed a multitude of definitions which have tended to obscure its meaning.

Historically, Lipps[1] is credited with initiating a theory of empathy in the early 1900's. He used the term Einfuhlung which in translation became empathy, for a theory in which motor mimicry or imitation was considered essential to the understanding of people. In his experiments on optical illusions, he suggested that the observing organism is inclined to project itself into the observed pattern. He insisted that while we employ our own past experience in empathy, the process itself has entirely objective reference.

MacDougall's[2] concept of empathy or active sympathy maintained much of Lipps' meaning. According to him, it involves a reciprocal relation between at least two persons. It is active in the sense that either party in the relation not only is apt to experience the emotions displayed by the other, but he desires also that the other share his own emotions.

In psychoanalytic theories, empathy has also been incorporated. Freud[3] suggested that our understanding of a

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1 T. Lipps, "Das Wissen von Fremden Ichen", in Psychological Untersuchungen, 1907, Vol. 1, p. 694-722, quoted by Orlo Strunk, "Empathy: A Review of Theory and Research", in Psychological Newsletter, Vol. 9, No. 2, 1957, p. 47-57.

2 William MacDougall, An Introduction to Social Psychology, 18th ed., London, Methuen, 1923, xxiv-459 p.

3 S. Freud, Group Psychology and the Analysis of the Ego, London, Hogarth, 1922, 134 p.

person who has little emotional significance for us is brought about by way of empathy which involves inference and mimicry. In psychoanalytic terms, he regarded empathy as a process by which we perceive what is essentially foreign to the ego.

Likewise, Sullivan[4] considered empathy as the means by which the attitudes of the mother are conveyed to the infant. While Sullivan was not too explicit about what he meant by the term, he apparently viewed it as a biologically derived means of emotional communication. By emotional contagion and communion Sullivan stated the infant first acquired his own feelings of anxiety from the anxiety felt by the mother.

Perhaps the most exhaustive review of the theory and research on empathy available today is provided by Strunk.[5] This survey serves to illustrate the discongruity amongst the countless definitions. Following the review, Strunk is unable to arrive at any precise conclusion regarding a definition of empathy. He states that despite abundant theorizing, empathy remains a somewhat ambiguous hodgepodge of meanings

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4 Harry S. Sullivan, Conceptions of Modern Psychiatry, Washington, D.C., William Alanson White Psychiatric Foundation, 1947, vii-153 p.

5 Orlo Strunk, "Empathy: A Review of Theory and Research", in Psychological Newsletter, 1957, Vol. 9, No. 2, p. 47-57.

and shades of meanings depending upon the coloring given it by different authors.

To familiarize the reader with some interpretations of the word, a number of definitions will now be presented. Warren, for instance, defines empathy as "a mental state in which one identifies or feels himself in the same state of mind as another person or group".[6]

English and English[7] appear to accept Murphy's interpretation. The latter regards empathy as "an objective and insightful awareness of the feelings emotions and behaviour of another person without as in sympathy feeling as he does".[8]

Johnson's[9] description is more flamboyant. The empathic person is considered to enter another person's experience and to comprehend what life means to him in his living adventure.

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6 H.C. Warren, Dictionary of Psychology, New York, Houghton Mifflin, 1934, p. 92

7 Horace B. English and Ava C. English, A Comprehensive Dictionary of Psychological and Psychoanalytical Terms, New York, Longman's, Green and Co., 1961, 594 p.

8 Gardner Murphy, An Introduction to Psychology, New York, Harper, 1951, p. 570.

9 P.E. Johnson, Personality and Religion, New York, Abington, 1957, 297 p.

Introducing her rating scale, Dymond assumed empathy to be "the imaginative transposing of oneself into the thinking, feeling and acting of another".[10]

On the other hand, Kerr and Speroff stress prediction and base the empathy test on the following definition: "the ability to put yourself in the other person's position, establish rapport and anticipate his reactions feelings and behaviour".[11]

In psychotherapy, empathy is believed to lie at the core of a successful relationship between therapist and client. In this context, Dymond and Cottrell view the therapist's task as:

> (...) to take the role of the patient and place himself in the psychological shoes of the patient (...) and perceive the situation from that perspective and to respond to himself as the patient responds to him.[12]

Bingham confirms the significance of empathy in the therapeutic situation and offers the following definition:

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10 Roselind F. Dymond, "Personality and Empathy", in Journal of Consulting Psychology, Vol. 14, No. 5, issue of October 1950, p. 343.

11 W.A. Kerr and B.J. Speroff, The Empathy Test: Manual of Instructions, Chicago, Psychometric Affiliates, 1955, p. 1.

12 Roselind F. Dymond and L.S. Cottrell, "The Empathic Responses: A Neglected Field for Research", in Psychiatry, Vol. 12, No. 4, issue of November 1949, p. 356.

"It refers to the ability of an individual to respond sensitively and imaginatively to another's feelings".[13]

As Strunk[14] points out, the general common sense idea of putting oneself in the other person's place seems to run throughout the definitions although such elucidations leave much to be desired. The author also brings attention to the fact that concepts such as sympathy, projection, identification, and insight have been attributed similar meanings and although some theorists have attempted to differentiate between these various terms, there is a lack of agreement among them, and available research is inadequate to confirm any distinctions made.

Luchins'[15] critical survey is also relevant here. He reports that while many contemporary definitions revolve around the idea that the empathizer somehow identifies or assumes the role of the object of empathy, such an explanation is meaningless when applied to groups of people or inanimate objects..

One solution of the problem for the researcher is to resort to operational definitions until such time as a more

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13 Walter Van Dyke Bingham and Bruce Victor Moore, How to Interview, 4th ed., New York, Harper, 1959, p. 46.

14 Strunk, Op. Cit., p. 47-57.

15 Abraham S. Luchins, "A Variational Approach to Empathy", in The Journal of Social Psychology, Vol. 45, No.1, issue of February 1957, p. 11-18.

uniform definition of empathy can be established. Such a plan will be adopted in the present study.

2. Measures of Empathy.

Reviews by Taft[16] and Strunk[17] reveal two basic approaches to the measurement of empathy, the self-other rating method and the objective test method. The former procedure developed by Dymond[18] was one of the first techniques designed to measure empathy. In short, subjects are asked to predict the self ratings of other people on a number of traits such as self confidence and leadership. The deviation score serves as the measure of empathy, i.e., the best empathizer is the individual whose prediction deviates least from the self ratings of the person whose responses are being predicted.

A number of criticisms have been levelled against this technique. It was observed by Bender and Hastorf[19]

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16 R. Taft, "The Ability to Judge People", Psychological Bulletin, Vol. 52, No. 1, issue of January 1955, p. 1-23.

17 Strunk, Op. Cit., p. 47-57.

18 Rosalind F. Dymond, "A Scale for the Measurement of Empathic Ability", in Journal of Consulting Psychology, Vol. 13, No. 2, issue of April 1949, p. 127-133.

19 A.H. Hastorf and I.E. Bender, "A Caution Respecting the Measurement of Empathic Ability", in Supplement to the Journal of Abnormal and Social Psychology, Vol. 47, No. 2, issue of April 1952, p. 574-576.

that in many cases a high empathy score resulted merely from a similarity between traits of the empathizer and the person with whom he is empathizing. To correct for this occurrence of projection, they devised a refined empathy score, obtained by subtracting the empathizer's own performance from the raw empathy score, i.e., from the score derived in the normal fashion. Several weaknesses of this proposal have been pointed out by Gage and Cronbach.[20] Although a few counter proposals in the matter of scoring have been suggested,[21] Dymond's technique remains the simplest and most fruitful available today.

The Empathy Test devised by Kerr and Speroff[22] exemplifies the objective test method. This is a simple pencil and paper test which is based on the assumption that individuals who are superior in empathic ability are persons who are above average in understanding and anticipating the reactions of other people. Respondents are asked to rank the popularity of fifteen magazines with the Average American,

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20 N.L. Gage and Lee J. Cronbach, "Conceptual and Methodological Problems in Interpersonal Perception", in Psychological Review, Vol. 62, No. 6, issue of November 1955, p. 411-423.

21 Lee J. Cronbach, "Proposals Leading to Analytic Treatment of Social Perception Scores", p. 353-379, in Renato Taguiri and Luigi Petrullo (eds.), Person Perception and Interpersonal Behavior, Stanford, University Press, 1958, xvii-379 p.

22 Kerr and Speroff, Empathy Test, Chicago, Psychometric Affiliates, 1951.

fourteen musical types among the United States non-factory workers and the magnitude of fifteen annoyances for persons aged twenty-five to thirty-nine years. Norms derived from an actual survey are supplied for comparison purposes and an empathy score is obtained. A Canadian version of the test is also available. Van Zelst[23] has referred to this as mass empathy since it includes not only the forecasting of another person's specific responses but also assumes prediction of the average person's responses.

Validity studies with the test have been disappointing. The general consensus of opinion[24] is that while validity studies carried out by the authors tend to be of a significant order, other researchers have not been as successful. The Canadian version appears to lack even face validity since some of the magazines subjects are asked to rank are obsolete or very unfamiliar. Attempts at discovering a relationship between the Empathy Test and Dymond's rating scale have met with failure.[25]

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23 Raymond H. Van Zelst, "Empathy Test Scores of Union Leaders", in Journal of Applied Psychology, Vol. 36, No. 5, issue of October 1952, p. 293-295.

24 Robert L. Thorndike, (Review of the Empathy Test), in O.K. Buros, (ed.), The Fifth Mental Measurements Yearbook, Highland Park, N.J., The Gryphon Press, 1959, p. 120-121.

25 Graham B. Bell and Rhoda Stolper, "An Attempt at Validation of the Empathy Test", in Journal of Applied Psychology, Vol. 39, No. 6, issue of December, 1955, p. 442-443.

Recently, the same authors have published the Primary Empathic Abilities Test.[26] This test is much more elaborate in scoring and content than the first and measures seven factors. To date, however, few validity studies have been published.

3. Theories Relating M and Empathy.

Despite the numerous meanings that have been attributed to the M response, empathy has repeatedly emerged as one interpretation. Rorschach felt that empathic ability is equally dependent upon human movement and color responses. He wrote: "Individuals capable of empathic relationships with others much include in their makeup certain introversive and extratensive elements."[27] Rorschach's view, however, has been modified and extended by later writers and there has been a tendency to confine empathy to the M response alone. Because of the diversity of meanings attributed to empathy, however, a corresponding disparity between interpretations of the M response can be expected.

Klopfer considers M to be related to the capacity for good relationships with other beings. He states:

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26 W. Kerr, Primary Empathic Abilities, Chicago, Psychometric Affiliates, 1957.

27 H. Rorschach, Psychodiagnostics, New York, Grune and Stratton, 1942, p. 99.

> When a human figure is seen in the blot then and is endowed with attributes of life - movement, desires, thoughts, feelings - it seems safe to assume that some process of empathic identification is involved.[28]

Schachtel[29] views M in terms of empathy essentially defined as the ability to understand other people. He considers M to indicate the ability for empathic projection.

Phillips and Smith's[30] prime emphasis is on empathy in terms of role taking and role assigning. They state that M provides an index of empathic participation. The underproduction of M represents the absence of empathic responsivity.

Boehner and Halpern[31] relate M to the concept of identification which they describe as the ability to put oneself in the place of another or to put oneself in different situations. This version of identification bears a striking similarity to some of the concepts of empathy discussed previously.

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28 B.Klopfer, Mary D. Ainsworth, W.G. Klopfer and R. R. Holt, Developments in the Rorschach Technique, Yonkers, World Book Co., 1954, p. 347.

29 E.G. Schachtel, "Projection and Its Relation to Character Attitudes and Creativity in the Kinaesthetic Response", Psychiatry, No. 1, February 1950, p. 69-100.

30 L. Phillips and J.G. Smith, Rorschach Interpretation: Advanced Technique, New York, Grune and Stratton, 1953, 385 p.

31 Ruth Boehner and Florence Halpern, The Clinical Application of the Rorschach Test, 2nd ed., New York, Grune and Stratton, 1945, 330 p.

Other authors are milder in their reference to empathy. Piotrowski states that M responses always reveal the subject's conception of his role in life. In his words: "Persons with a large number of M should show much more awareness of the complexities of human relationships than those with few or no M."[32]

Beck declares that the average individual discloses in his M production the extent to which he "uses his imagination to understand the world he deals with and to solve his problems".[33]

King, attempting to redefine the M response, does not deviate widely from the general empathic interpretation. He proposes that: "M reflects the ability in fantasy to project the self into time and space in the interpersonal sphere."[34]

It is apparent from the foregoing survey that although individual variations in the interpretation of the M response do exist, most so-called authorities relate M and empathy to some degree.

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32 Z.A. Piotrowski, "A Rorschach Compendium Revised and Enlarged", Psychiatric Quarterly, Vol. 24, No. 3, 1950, p. 568.

33 S.J. Beck, Rorschach's Test, Vol. II - A Variety of Personality Pictures, New York, Grune and Stratton, 1945, p. 26.

34 G.F. King, "A Theoretical and Experimental Consideration of the Rorschach Human Movement Response", in Psychological Monographs, Vol. 72, No. 5, 1958, p. 4.

4. Experimental Studies Relating M and Empathy.

The experimental evidence suggesting an association between the M response on the Rorschach Test and empathy is largely indirect. Much of it is derived from the mass of data extracted from studies on expressive movement and personality judgment.[35]

Taft[36] and, to a lesser extent, Vernon[37] provide excellent summaries of the characteristics found to be inherent in a good judge of personality. Inasmuch as good empathic ability probably enhances personality judgment, the same factors influencing the latter no doubt affect empathy. An examination of Taft's review, therefore, should prove beneficial.

The first characteristic mentioned by Taft[38] as affecting judgment of personality is age. He states that while the ability to judge emotional expressions increases with age in children, no such increment with age is found in adults. What implications does this have for the present

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35 Gordon W. Allport, Pattern and Growth in Personality, New York, Holt, Rinehart and Winston, 1961, xiv-593 p.

36 Taft, Op. Cit., p. 1-23.

37 Philip E. Vernon, "Some of the Characteristics of the Good Judge of Personality", in The Journal of Social Psychology, Vol. 4, No. 1, issue of February 1933, p. 42-58.

38 Taft, Op. Cit., p. 1-23.

study? Literature on the developmental aspects of the M response reveals a similar pattern with age. Human movement responses are rare at an early age level. According to one author,[39] M responses start in very minimally at two years of age with an average incidence per child of .07 and increase rather steadily to 1.70 per child at ten years. No such increase occurs throughout adult life. These results strongly imply a possible correlation between the number of M and empathy.

Intelligence also appears to be related to the ability to judge others according to Taft.[40] At the same time, most theorists including Rorschach[41] consider M to reflect intelligence to some extent and investigations performed along this line bear out this relationship.[42]

A third factor affecting personality judgment is esthetic ability and sensitivity. Taft reports that the ability to judge others seems to be higher in those persons with dramatic and artistic interests. On the other hand,

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39 Louise Bates Ames, Janet Learned, Ruth W. Metraux, and Richard N. Walker, Child Rorschach Responses, New York, Hoeber, 1952, xiv-310 p.

40 Taft, Op. Cit., p. 1-23.

41 Rorschach, Op. Cit., 226 p.

42 William D. Altus and Grace Thompson Altus, "Rorschach Movement Variables and Verbal Intelligence", in Supplement to The Journal of Abnormal and Social Psychology, Vol. 47, No. 2, issue of April 1952, p. 531-533.

Klopfer[43] and Piotrowski[44] are but a few who consider M as an indicator of creative ability. Furthermore, studies such as that conducted by Roe[45] reveal that psychologists, social workers, novelists, artists, and other creative individuals interested in psychosocial relations have on the average many more M than other less creative groups. Such research tends to lend support to an affiliation between M and empathic ability.

Taft[46] reports that the ability to predict how subjects will respond to opinion items shows a consistent positive relationship with measures of social skill. Correspondingly, Ansbacher's[47] rationale for the M response in terms of social interest and King's[48] review of the treatment accorded the M response as an interpersonal concept, are in line with an empathic interpretation of M.

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43 Klopfer, et al., Op. Cit., 726 p.

44 Zygmunt A. Piotrowski, "The Movement Score", p. 130-153, in Maria A. Rickers-Ovsiankinna, Rorschach Psychology, New York, Wiley, 1960, xvi-483 p.

45 A. Roe, "A Psychological Study of Eminent Psychologists and Anthropologists, and a Comparison with Biological and Physical Scientists", in American Psychological Association, Vol. 67, No. 352, 1953, (quoted by Piotrowski, Ibid., p. 142).

46 Taft, Op. Cit., p. 1-23.

47 H.L. Ansbacher, "Social Interest, an Adlerian Rationale for the Rorschach Human Movement Response", in Journal of Projective Techniques, Vol. 20, No. 4, issue of December 1956, p. 363-365.

48 King, Op. Cit., p. 1-23.

Finally, emotional stability and character integration correlate positively with the ability to judge others. Taft[49] explains that presumably the poorer judges tend to be poorly adjusted and therefore probably more likely to allow personal biases to affect their judgments. In this regard, it will be recalled that emotional stability was one of the interpretations attributed to M by Rorschach.[50] Likewise, Piotrowski[51] and Klopfer[52] link M and personality integration and inner stability respectively. Thus once again a favorable light is cast on the hypothesis suggesting a connection between the M response and empathy.

Studies with abnormal groups also favor the hypothesis. In the field of psychopathology, a number of investigators present data implying that the quantity of M given by neurotics and schizophrenics is below normal.[53] In addition, it is the belief of many authorities that the fundamental symptom in schizophrenia and other mental disorders is

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49 Taft, Op. Cit., p. 1-23.

50 Rorschach, Op. Cit., 226 p.

51 Piotrowski, Op. Cit., p. 543-596.

52 Klopfer, et. al., Op. Cit., x-726 p.

53 Maria A. Rickers-Ovsiankina, "The Rorschach Test as Applied to Normal and Schizophrenic Patients", in British Journal of Medical Psychology, 1938, Vol. 17, p. 227-257.

diminished empathy. For instance, Hoskins[54] considers the basic manifestation in schizophrenia to be a loss of empathy while Dymond and Cottrell[55] propose that empathic phenomena are the critical factors in human adjustment. Further support is derived from studies such as that by Piotrowski and Schreiber[56] which show a rise in the quantitative production of M with intensive and prolonged therapy.

Investigations with the psychogalvanometer are also relevant here. The psychogalvanometer provides a measure of emotional arousal by recording the electrical conductance of sweat in the palm of the hand. It is plausible to assume that a highly empathic person, i.e., one who is inclined to become emotionally involved in situations and other people's feelings, will show a higher reaction than the less empathic person. Indeed, many studies verify the fact that schizophrenics and other abnormal groups show a diminished response.

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54 R.G. Hoskins, The Biology of Schizophrenia, New York, Norton, 1946, 191 p.

55 Dymond and Cottrell, Op. Cit., p. 355-359.

56 Z.A. Piotrowski and M. Schreiber, "Rorschach Perceptanalytic Measurement of Personality Changes During and After Intensive Psychanalytically Oriented Therapy", p. 337-361, in G. Bychowski and J.L. Despert (eds.), Specialized Techniques in Psychotherapy, New York, Basic Books, 1952, viii-371 p.

Hoch et al[57] gave a yes-no type of questionnaire consisting of personal items to one hundred psychotics and one hundred normals and recorded the psychogalvanic response. The psychotics showed a weak response and to some questions no reaction whatsoever. On the other hand, normals reacted with deflections to practically every question.

Frost[58] derived similar results. He obtained a continuous psychogalvanic recording from normals and schizophrenics during Rorschach performance. Among other things, he found that the mean reflex for normals exceeded that for schizophrenics.

Consequently, bearing in mind that studies have shown a decrease of M responses in abnormal states, experiments such as the preceding appear to sustain a tie between M and empathy.

King's[59] study with a neuropsychiatric population bears close resemblance to the present one. Using controlled interviews, he was able to show that high M producers

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57 P. Hoch, J.F. Kubis and F.L. Rooke, "Psychogalvanometer Investigations in Psychoses and Other Abnormal Mental States", in Psychosomatic Medicine, Vol. 6, No. 3, issue of July 1944, p. 237-245.

58 C.F. Frost and K.H. Rodnick, "The Relationship between Particular Rorschach Determinants and the Concomitant Galvanic Skin Responses for Schizophrenic and Normal Subjects", in American Psychologist, Vol. 3, No. 7, 1948, p. 277.

59 King, Op. Cit. p.1-23.

exceeded the low M group in their acknowledgment of interpersonal problems and in their utilization of interpersonal fantasy. They also revealed a greater inclination to project themselves backward and forward in time. These results are relevant here since one would expect those persons with many M to show a greater propensity to self projection in the interpersonal environment.

Employing normal groups, various researchers have attempted, on the basis of the number of M responses, to differentiate individuals presumed to possess different degrees of empathy. The major study along this line is probably that of Frankle[60] who used as his criterion group social work students engaged in case work. Hypothesizing that M reflects the ability to empathize with and understand people, he was able to predict significantly better than chance, the adequacy of the students as measured by two measures of effectiveness in forming interpersonal relationships.

The Menninger study of resident psychiatrists according to Holt[61] showed that the top eight men on the basis of

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60 A.H. Frankle, "Rorschach Human Movement and Human Content Responses as Indices of the Adequacy of Interpersonal Relationships of Social Work Students", unpublished doctoral dissertation, University of Chicago, 1952, quoted by G.F. King, Op. Cit., p. 1-23.

61 B. Klopfer, et al., Op. Cit., x-726 p.

pooled ratings of empathy produced significantly more M than the bottom eight.

Barrell[62] obtained a small but a significant positive correlation between the number of M and ratings on insight into the self and insight into others, although the latter correlation dropped to none significance after the total amount of response was statistically controlled.

Spiegelman[63] endeavoured to determine whether an evaluation of the personality of a film creator could be achieved by viewing one of his films. Forty-four clinicians and a control group observed the film and were then asked to fill out a true-false questionnaire concerning the creator's personality. The clinicians did significantly better than chance and exceeded the control group. Assuming that clinicians have a higher M production, such results might be expected.

Jones'[64] experiment with the psychogalvanometer is also pertinent. He recorded the psychogalvanic responses of

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62 R.P. Barrell, "The Relationship of Various Types of Movement Responses in the Rorschach Test to Personality Trait Ratings", unpublished doctoral thesis, University of Michigan, 1950, 194 p.

63 Marvin Spiegelman, "Evaluation of Personality by Viewing a Motion Picture", in Journal of Projective Techniques, Vol. 30, No. 2, issue of June 1956, p. 212-215.

64 Harold E. Jones, "The Study of Patterns of Emotional Expression", p. 161-168, in Martin L. Reymert (ed.), Feelings and Emotion: the Mooseheart Symposium, New York, McGraw Hill, 1950, xxiii-603 p.

one hundred adolescents and after selecting the twenty lowest and highest reactors, rated them independently for behavioural characteristics. Results indicated that high reactors were, among other things, more introversive and more mature, features generally associated with a high M production.

Block[65] repeated Jones' experiment using older groups and obtained essentially similar results.

In summary, the preceding review of the literature strongly implies that a relationship exists between the quantity of M produced on the Rorschach Test and empathic ability. No direct study into this association has ever been executed however. This project endeavours to delve into this problem.

The hypothesis as stated in the null form is that two groups of students differing in their quantitative production of human movement or M responses on the Rorschach Test will show no significant differences in empathy.

For this study, however, empathy will be defined operationally as the number of correct responses on two tests that can be anticipated by an observer for a

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65 J. Block, "A Study of Affective Responsiveness in a Lie-Detector Situation", in Journal of Abnormal and Social Psychology, Vol. 55, No. 1, issue of July 1957, p. 11-15.

given subject, after exposure to an interview involving that subject.

In operational terms, therefore, the null hypothesis may be reworded in the following manner: Two groups of students differing in their quantitative production of human movement or M responses on the Rorschach Test will show no significant differences in the number of correct responses anticipated on any of the two tests, for any subject, after exposure to an interview involving that subject.

The next chapter will present the design of this study.

CHAPTER II

EXPERIMENTAL DESIGN

This chapter presents the procedures involved in testing the hypothesis proposed in the preceding chapter. Section 1 is concerned with a discussion of the tools employed including a justification for their use. Section 2 describes the sample population. Section 3 offers an account of the experimental procedure and the precautions taken. Section 4 reports on the techniques utilized in the evaluation of the data and lists the statistical formulae employed.

1. The Tools of the Experiment.

To test the foregoing hypothesis adequately, five basic tools were employed. The Group Rorschach Test[1] was used for dividing the sample into low and high M groups. An interview served as a tool by means of which the empathizers or observers could familiarize themselves with the subject with whom they were to empathize. The Rosenzweig Picture-

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1 M.R. Harrower-Erickson and M.E. Steiner, Large Scale Rorschach Techniques, Charles C. Thomas, Springfield, 1945, xi-419 p.

Frustration Study,[2] hereafter referred to as the P-F Study, and the Study of Values[3] were used as prognosticating instruments. After observing the subject in the aforementioned interview, the empathizers predicted his responses on each of the two tests. The correctness of the prediction served as an indicator of empathic ability. Finally, the Otis Self Administering Test of Mental Ability, Higher Examination: Form A[4] enabled the determination of the role of intelligence on the empathic process.

The Group Rorschach Method advocated by Harrower-Erickson and Steiner[5] was adopted for this project. Essentially this technique involves the projection of ten 35 mm. slides portraying the Rorschach blots unto a screen or wall. Instead of reporting their perceptions orally to the examiner as in the case of the individually administered Rorschach Test, subjects are asked to write down their responses to the ten ink blots in a booklet. In addition, the inquiry is also

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2 Saul Rosenzweig, The Rosenzweig Picture-Frustration Study, Saul Rosenzweig Publisher, Washington, 1948.

3 Gordon W. Allport, Philip E. Vernon, and Gardner Lindzey, Study of Values, 3rd edition, Houghton Mifflin, Boston, 1960.

4 Arthur S. Otis, Otis Self-Administering Tests of Mental Ability, Harcourt, Brace and World Inc., New York, 1922.

5 Harrower-Erickson, Op. Cit., xi-419 p.

self administered in that each subject locates his own response by circling miniature diagrams of the blot which are provided. A fuller elaboration of the procedure involved will be offered in Section 3 of this chapter.

The use of the group rather than the individually administered Rorschach Test seems justified in this case. One advantage of the method lies in its simplicity. The number of subjects that can be tested at a single session is limitless as long as the projection is visible to all. More important, however, than its brevity is the fact that the group method according to many investigators is in general as good as the individual technique. Harrower-Erickson[6] states that both methods yield essentially the same information. In one study, he found that the two methods yielded fewer differences than did repetition by the same method. Although some changes were detected, they did not involve the M response. Hire[7] and Rohrer[8] are but a few of the other researchers who have found no essential differences between the two methods especially with regard to the production of M responses.

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6 Harrower-Erickson, Op. Cit., xi-419 p.

7 William A. Hire, "A Group Administration of the Rorschach: Methods and Results", in Journal of Consulting Psychology, Vol. 14, No. 6, issue of December 1950, p. 496-499.

8 J.H. Rohrer, E.L. Hoffman, J.W. Bagley, Robert S. Herrmann and W.L. Wilkins, "The Group-Administered Rorschach as a Research Instrument: Reliability and Norms", in Psychological Monographs, Vol. 69, No. 8, 1955, p. 1-13.

The reliability of the method should also determine its value. In this connection, McCall[9] reports that the Harrower-Erickson technique, like other group techniques, yields a reasonably good reliability. Rohrer, et al[10] report that thirteen of the categories had test-retest reliability coefficients of .85 or better with the reliability of the M response equalling .86. Lawshe[11] reports a reliability coefficient of .61 with the multiple choice technique.

In general, then, itappears that the Group Rorschach Test meets the standards of test requirements. Because the prime concern of this study rests not on individual interpretation but rather on group performance, it was especially felt that this technique would adequately suit the purpose. At any rate, a test-retest reliability coefficient with regard to the quantitative production of M will be determined in this project.

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9 Raymond J. McCall, "Present Status of the Rorschach", in O.K. Buros (ed.), The Fifth Mental Measurements Year Book, Highland Park, N.J., TheGryphon Press, 1959, p. 278-285.

10 Rohrer, et al., Op. Cit., p. 1-13.

11 C.H. Lawshe, Jr., and Max H. Forster, "Studies in Projective Techniques. I. The Reliability of a Multiple Choice Group Rorschach Test", in Journal of Applied Psychology, Vol. 31, No. 2, issue of April 1947, p. 199-211.

The interview was another important tool utilized in this study. In most experiments entailing empathic measurement[12] subjects are asked to associate with persons for some time before they are asked to empathize with them. This technique is somewhat clumsy and laborious and, for this reason, a method utilized by Gage[13] was preferred. It consists of a modified interview in which the subject of empathy is asked to perform a number of tasks in the presence of the empathizers. By this means, the latter are given an opportunity to acquaint themselves with the subject.

In the present study, each subject was engaged in a ten minute interview with the writer, while the empathizers or observers looked on. Four different tasks were imposed on each subject.

The first task required the subject to respond to two pictures in TAT[14] fashion. One picture portrayed a puzzled young couple engaged in a discussion beneath a neon light. The second picture showed a young girl seated at a

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12 Rosalind F. Dymond, "A Scale for the Measurement of Empathic Ability", in Journal of Consulting Psychology, Vol. 13, No. 2, 1949, p. 127-133.

13 N.L. Gage, "Judging Interests from Expressive Behaviour", in Psychological Monographs, Vol. 66, No. 18, 1952, p. 1-20.

14 H.A. Murray, Thematic Apperception Test, Cambridge, Harvard University Press, 1943.

desk, looking inquiringly at an elderly man. The TAT instructions according to Bellak[15] were read.

For the second task, the subject was presented with a sheet on which two pairs of jokes were printed. He was asked to read the jokes out loud and to select the one from each pair which he felt to be the more amusing. The jokes, taken from The IPAT Humor Test of Personality,[16] may be found in the Appendix.

A box of model clay was supplied for the third task and the subject was requested to make a person using the clay. No time limit was imposed.

During the fourth and last portion of the interview, questions derived largely from the Personality and Interest Inventory[17] and pertaining to likes and dislikes were directed toward the subject. The list of questions may be found in the Appendix.

In selecting the content of the interview, the primary aim was to present as wide a scope of the subject's

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15 Leopold Bellak, "The Thematic Apperception Test", p. 185-229, in Lawrence E. Abt and Leopold Bellak, Projective Psychology, Greve, N.Y., 1959, xvi-485 p.

16 R.B. Cattell, A.K.S. Cattell, L.B. Lubersky, and J. Lundgoot, The IPAT Humor Test of Personality, Institute for Personality and Ability Testing, Champaign, Ill., 1950.

17 Gertrude Hildreth, Personality and Interest Inventory, Bureau of Publications, Teachers College, Columbia University, 1935.

personality as possible within the time allotted. The first two tasks (TAT and jokes) were felt to give some indication of the thoughts, feelings, and possible modes of behaviour and humour of each subject. Modeling of the person provided an opportunity to observe the subject in action. A knowledge of the subject's likes and dislikes provided by direct questioning supplied some objective knowledge about the subject from which further inferences would be drawn by the observers.

The P-F Study was one of the tests employed in the determination of empathic ability. This is a projective test consisting of twenty-four cartoon-like pictures featuring two persons, one in a mildly frustrating situation to which the other is reacting verbally. No remarks are printed but instead a blank caption box is attached. The subject is asked to imagine what the latter figure would answer and to write in the blank box the very first reply that comes into his mind. It is assumed that the subject identifies himself with the frustrated individual and projects his own bias into the replies given.

Responses are scored for direction of aggression and for type of reaction. In the first category, three types of responses are possible: extrapunitive, expressing aggression against the environment; intropunitive, in which aggression is directed toward the subject himself; and, impunitive when

aggression is evaded in an attempt to gloss over the situation. Reaction types may be obstacle dominant, ego defensive or need persistent, depending on whether the response emphasizes the barrier, the subject's ego, or the solution of the problem respectively. A group conformity rating (GCR) may also be obtained which enables comparison of the subject's responses with typical reactions. In this project, responses were scored for direction of aggression only, for reasons given shortly.

Mirmow[18] reviews the reliability studies with this test. According to her, test-retest reliability studies reveal coefficients for the adult form, after two and seven month intervals, ranging from .34 to .71 for the major scoring categories. Bernard[19] reports test-retest reliability coefficients after three to nine months, ranging from .45 to .73.

Although these coefficients are not extraordinarily high, they do, as Dana[20] points out, meet the requirements

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18 Esther Lee Mirmow, "The Rosenzweig Picture Frustration Study", p. 209-221, in Daniel Brower and Lawrence E. Abt (eds.), Progress in Clinical Psychology, Vol. 1, Grune and Stratton, New York, 1952, xi-328 p.

19 Jack Bernard, "The Rosenzweig Picture Frustration Study: 1: Norms Reliability and Statistical Evaluation", in Journal of Psychology, Vol. 28, October 1949, p. 325-332.

20 R.H. Dana, (Review of the Rosenzweig Picture Frustration Study), in O.K. Buros (ed.), The Fifth Mental Measurements Year Book, Highland Park, N.J., The Gryphon Press, 1959, p. 291-295.

for group interpretation which is the essence of the present study. Furthermore, since the scoring system will be simplified in this case by considering only the direction of aggression, a higher reliability is expected. A test-retest reliability carried out in this project should bear this out.

One weakness of this test mentioned by several reviewers lies in its low internal consistency. However, as Mirmow[21] states, these investigators fail to take into account the fact that homogeneity of items is not generally considered a desirable attribute in projective tests and, in fact, may be regarded as a liability. The general feeling of reviewers is that the test falls "as close to being a model instrument as any projective technique currently in use".[22]

In addition to the fact that the writer felt the P-F Study to be an adequately reliable tool, one other main reason determined its selection. It was felt that the type of response called for on this test was particularly in keeping with the demands of the experiment. Since the scoring of the responses would be in terms of the direction of aggression, it called for an emotional appraisal of the

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21 Mirmow, Op.Cit., xi-328 p.

22 Dana, Op. Cit., p. 293.

subject of empathy by the empathizers. The reader will recollect that most definitions of empathy included an emotional element and, therefore, the P-F Study appears to be an appropriately chosen test.

The Study of Values was selected as the objective test that would be utilized for prediction purposes. This test has been used extensively in research and is generally considered in a favourable light. Designed to measure the relative prominence of six basic interests or motives in personality, viz., the theoretical, economic, aesthetic, social, political, and religious, it is now in its third edition. It consists of a number of questions based upon a variety of situations to which two alternative answers in Part I and four alternative answers in Part II are furnished. In Part I, the subject is asked to choose the alternative that is relatively more acceptable to him and to indicate the degree of acceptability by his distribution of three points, e.g., 2 and 1, 0 and 3, etc. Part II demands that he rank the statements in order of preference.

Reportedly, test-retest reliability coefficients with the third edition are high, averaging .89 after a one-month interval and .88 following a two-month lapse.[23]

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23 Gordon W. Allport, Philip E. Vernon, and Gardner Lindzey, Study of Values, 3rd edition: Manual, Houghton, Mifflin, Boston, 1960.

Although there is little doubt that the Study of Values is a reliable instrument, a test-retest reliability coefficient will be obtained in this study.

To test for the possible effects of intelligence on empathic ability, the Otis Self Scoring Test of Mental Ability Higher Examination Form A was administered. Because an estimation of the general intellectual ability of the two groups was sought, it was felt that a group test like the Otis would suffice.

A description of this test is superfluous considering its general familiarity. A test-retest reliability of .84 is reported in one study.[24]

2. The Sample.

Before delving into the nature of the sample, it should be clear to the reader that really two categories of individuals are involved in this experiment. On the one hand, there are the empathizers or observers, hereafter referred to as the Os, who comprise the key group. It is this group which was administered the Rorschach Test and it is this group as well which was asked to empathize with

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24 Laurent A. Isabelle, Actual versus Clinical Methods in Predicting Achievement in a Science Faculty, unpublished Ph.D. thesis, University of Ottawa, Ottawa, 1961, 176 p.

another person and to predict his responses on the P-F Study and the Study of Values. On the other hand, the subjects or stranger with which the aforementioned group was asked to empathize, and which were observed by them in the interview, make up the second category. These individuals will be denoted merely as the subjects or Ss.

The final sample consisted of thirty Os and three S. The Os consisted of students from the Faculty of Education, enrolled in a summer school course in Psychology at the School of Psychology and Education, University of Ottawa. Although thirty-five students engaged in the project to some degree, only thirty were salvaged for the complete project due to drop outs and language barriers. The latter factor arose out of the fact that the School is bilingual. Even though subjects were informed that they could respond in either French or English, those showing extreme deficiency in the English language were rejected following the study, since the chief portion of the experiment was conducted in this language.

The particular group was selected primarily for two reasons. Firstly, its homogeneity was considered of prime importance in that features such as education and age were felt to be important variables. Secondly, because the subjects were enrolled in a course in Psychology, it was easy to introduce the experiment as part of the course

work and by this means induce motivation. It should be pointed out, however, that all subjects were volunteers and were free to refuse participation.

The Rorschach performance of the Os constituted the basis for the selection of high and low M groups. Using four or more M as the criterion for the high M group and three or less M as the criterion for the low M group yielded two groups of fourteen and sixteen respectively. The number of M ranged from 0 to 12. Table I offers a comparison of the two groups on age, sex, years of education, and Intelligence Quotient. It is readily observed that the two groups were adequately equated for all the variables except I.Q. in which case the high M group surpassed the low M group. For this reason, the role of intelligence on empathy will be computed later.

Three Ss, viewed separately by the Os, were utilized in this study. Because experiments have indicated that the empathic process is variously influenced by different subjects of empathy,[25] it was felt that more than one S should be employed. Two Ss were male and one a female. A comparison of the characteristics of the various S is presented in Table II.

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25 P.E. Vernon, "Some Characteristics of the Good Judge of Personality", in Journal of Social Psychology, Vol. 4, No. 1, 1933, p. 42-58.

Table I.-

A Comparison of the High and Low M Groups on Sex, Age, Education and I.Q.

Group	Sex			Age		Education		I.Q.	
	N	M	F	Mean	σ	Mean	σ	Mean	σ
High M	14	4	10	32.50	8.39	15.35	1.23	119.07	7.30
Low M	16	7	9	34.50	12.31	14.87	1.72	109.43	8.78

Table II.-

A Comparison of the Characteristics of the Three Persons Engaged As Subjects of Empathy (Ss).

Subject	Sex	Age	Occupation
A	F	25	laboratory technician
B	M	27	Psychology student
C	M	24	Psychology student

3. The Experimental Procedure.

The entire project covered a period of nine days, each session lasting approximately one hour and a quarter. The procedure will be described in the order that it was conducted.

On the first day, the Group Rorschach Test was administered to the thirty Os in accordance with the instructions advocated by Harrower-Erickson and Steiner.[26] Regular 35 mm. slides of the Rorschach blots were projected by means of a 300-watt projector on a freshly painted white wall. The projection formed an image 5' x 5½'. A regular small classroom was employed. The Os were individually seated in positions that ensured good visibility. All blinds were drawn tightly and no light other than that from the projector was allowed to infiltrate. The available light was sufficient to enable the Os to write down their responses.

Each slide was exposed for three minutes with a short interval between each slide. A booklet containing ten blank pages in addition to the cover page was used for recording purposes. Subjects were asked to copy their responses in these booklets beginning with the page marked

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26 Harrower-Erickson and Steiner, Op. Cit., xi-419 p.

Slide I and flipping the page each time the slide was changed, in this manner devoting one page to each slide.

Instructions offered by Harrower-Erickson and Steiner[27] regarding the mode of responding were read and explained until they were fully understood. Individual instructions and explanations were given if found necessary.

After the administration of the Rorschach Test proper, the enquiry was conducted in accordance with the instructions of Harrower-Erickson and Steiner.[28] For this portion of the test, subjects were provided with sheets illustrating miniature diagrams of the Rorschach blots which they were asked to use in locating their responses, by encircling. The free enquiry technique was employed in favor of the specific factor method. With the former technique, no determinants are stipulated. The testee is asked to elucidate each response, the elaboration being left entirely to his own discretion. This procedure, favored by Sender,[29] would especially seem more appropriate in this study, since the M response which is of primary concern here, encompasses more than the objective stimulus itself

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27 Harrower-Erickson and Steiner, Op. Cit. , xi-419 p.

28 Ibid. , xi-419 p.

29 Sadie Sender, "The Influence of Variations in the Rorschach Group Method Administration upon the Scorability of the Records", in Rorschach Research Exchange, Vol. 7, No. 1, 1943, p. 54-69.

but calls for a kinesthetic projection on the part of the observer. The specific factor enquiry, on the other hand, entails the listing of the possible determinants and as such can be suggestive and bias producing, particularly with regard to a response such as the M.

The second day of the experiment was devoted to the measurement of empathy. Before the session was actually under way, observers were given the following instructions:

> Today you will observe a subject for approximately 10 minutes during which time she (he) will be asked to perform various tasks and to respond to a number of questions. You are asked to pay close attention to her (him). By utilizing any cues whatsoever you will attempt to understand how she (he) feels, thinks, and acts in this situation and how she (he) might do so in other situations. After she (he) has left the room, you will be asked to answer two tests as you think the subject will answer them.

Subject A was then brought in and her age and occupation disclosed to the observers. A loudspeaker was used to ensure that A's voice was audible to all the observers. Each session was taped to obtain a record of the proceedings. The interview proper was then begun and A instructed to go through the four tasks outlined in Section 2. Upon completion of the last task, A was asked to leave the room and to fill out the Rosenzweig P-F Study and the Study of Values. At the same time, the Os were instructed to answer the aforementioned tests, as they predicted the subject

would answer them. No time limit was imposed and subjects were allowed to leave as soon as they completed the two forms.

This session thus yielded two types of information. A's performance on the Rosenzweig P-F Study and the Study of Values was secured, and the predicted performance of A on the two tests, by the thirty Os was also obtained.

Days three and four were occupied in exactly the same fashion as the second day, except different Ss were observed. Subject B was observed on the third day and subject C on the fourth day.

On the fifth day, the thirty Os' own performance on the Rosenzweig P-F Study and the Study of Values was acquired and the Otis Self-Scoring Test of Mental Ability Higher Examination Form A was also administered, the twenty-minute time limit being used with the latter test.

In essence, the entire experiment was completed at the end of the fifth day. However, because reliability was considered to be an important aspect, the entire proceedings of the first four days were repeated. Thus, on the sixth day, subject A was observed again. Subjects B and C were observed once more on the seventh and eighth days respectively, while on the ninth day the Group Rorschach Test was re-administered.

The possible influence of memory induced the writer to repeat the study in the foregoing sequence. It was held unlikely that the Os could remember for any length of time their previous responses for each subject to the P-F Study and the Study of Values, in view of the large number of items, and hence a four day lapse between retesting was deemed sufficient. On the other hand, memory could have likely influenced the performance on the Rorschach Test if too short an interval was allowed and hence retesting with the latter test was relegated to the final day.

4. The Evaluation of the Data.

The raw data having been obtained in the described manner, the following features were investigated: the test-retest and scorer reliabilities of the M response; the test-retest reliability of the empathy scores; the statistical significance of the difference in mean empathy, projection and similarity scores between the low and high M groups; the correlations between the mean projection scores and mean similarity scores for both groups; and, finally, the correlation between Otis I.Q. and empathy scores.

Before presenting the statistical formulae utilized in this investigation of the above features, the scoring systems employed will be discussed.

The normal scoring method using Klopfer's[30] conception of the M response was utilized in the scoring of the Rorschach Test. Two scorers were employed.

In both the P-F Study and the Study of Values, a deviation from the normal scoring procedure was adopted. In reference to the former test, items were scored for direction of response only, resulting in three types of possible answers, viz., intropunitive, extrapunitive, and impunitive. In cases where more than one type of response was given, the dominant one was selected.

Two main reasons exist for the exclusion of the type of reaction and group conformity rating from the scoring system. Firstly, it was felt that by simplifying the scoring system, a higher reliability would be achieved. Moreover, the scoring system proposed by the author was considered too complicated and, because of this, would place too much of a demand on the Os. In a pilot attempt to utilize the usual scoring method, it was found that very few correct answers were anticipated.

Subsequent to the scoring of the P-F Study in the above manner, three scores were derived for each O, viz., an empathy score, a projection score, and a similarity

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30 B Klopfer, Mary D. Ainsworth, W.G. Klopfer, and R.R. Holt, Developments in the Rorschach Technique, Yonkers, World Book Co., 1954, 726 p.

score. The empathy score was obtained from an item by item comparison of each O's predicted response with the particular S's response in terms of direction of aggression. Items showing agreement as to direction of aggression were considered accurately predicted by the Os. Thus, the greater the degree of correspondence between the performances of S and O, the higher the empathy score resulted.

The projection score was calculated in a similar fashion to determine the extent to which each O projected his own performance into his predicted response for S. It was derived from an item by item comparison of each O's personal responses with his predicted responses for each of the Ss. Again, a high agreement between the two responses yielded a high projection score.

Finally, the similarity score was also determined for each O. An item by item comparison of each O's personal response with each S's response furnished the similarity score. This score indicated the degree to which each O resembled each S with regard to his responses on the P-F Study.

The primary reason for not adopting the common scoring method with the Study of Values stems from the fact that this scale seeks to measure the relative strength of each of the six values rather than the absolute intensity. Thus, a high score on one value must be compensated for by

a lower score elsewhere. In relation to the present study, this would mean that an error in prediction on one value would automatically result in a prediction error on another value. For this reason, an absolute scoring system was sought. The obvious solution was to follow the procedure adopted with the P-F Study and to obtain the empathy scores by using each S's test as the scoring key. However, because the Study of Values is divided into two dissimilarly scored portions, some difficulty in scoring was encountered. To counteract this problem, only Part I (thirty items) of the scale was employed. In addition, weighted scores were not considered since it was felt little would be achieved by their use. Instead, responses were considered matched if the preferences indicated were in the same direction. Hence, in the case of the empathy scores, a response was considered correctly predicted by O if the direction of the preference was the same as that picked by the S. For example, a response of 2 and 1 by S, was regarded accurately predicted by O if the latter's answer was either 2 and 1 or 3 and 0. The projection and similarity scores were also obtained in this manner, following the procedure employed with the P-F Study.

In scoring the Otis Self Administering Test of Mental Ability, the raw scores obtained in the twenty minute testing period were transformed to the thirty minute

scores by means of the conversion table supplied in the Manual[31] for the Otis. I.Q.'s were used as estimates of performance.

Turning to the statistical techniques utilized, the Pearson Product Moment formula was used in determining the reliability coefficients and other correlations. The formula is expressed thus:[32]

$$r = \frac{N\Sigma XY - \Sigma X \Sigma Y}{\sqrt{N\Sigma X^2 - (\Sigma X)^2}\sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

Since this project deals with small samples, the significance of the difference in mean scores between the low and high M groups, on each of the previously mentioned measures was evaluated by the following formula:[33]

$$t = \frac{D}{\sigma_{Dm}}$$

where $\sigma_{Dm} = \sigma_{c.s.}\sqrt{\frac{1}{N_1} + \frac{1}{N_2}}$

and $\sigma_{c.s.} = \sqrt{\frac{\Sigma(x_1 - m_1)^2 + \Sigma(x_2 - m_2)^2}{N_1 + N_2 - 2}}$

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31 Arthur S. Otis, Otis Self Administering Test of Mental Ability, Manual of Directions and Key, Yonkers, World Book Co., 1922, 12 p.

32 Lawrence T. Dayhaw, Manuel de Statistique, Ottawa, Canada, Editions de l'Universite d'Ottawa, 1958, xxii-530 p.

33 Ibid., xxii-530 p.

The following chapter will be devoted to the reporting of the experimental results and to a discussion of these results and their possible implications.

CHAPTER III

PRESENTATION AND DISCUSSION OF RESULTS

This chapter will be concerned first with the reliability of the various measures. The test-retest and scorer reliabilities of the M response will be dealt with at the onset. Next, the reliability of the empathy scores will be discussed. The main findings will be presented subsequently and the relationship between the high and low M groups with regard to empathy, projection and similarity scores will be studied. Finally, the role of intelligence in the empathic process will be evaluated.

1. Reliability of the M Response.

Because the prime emphasis of this study is on the M response, its reliability is an important feature. Whether a subject falling in the low or high M group on one occassion remains in the same category upon retesting is of vital importance. Likewise scorer reliability must also reach acceptable standards.

Table III displays the test-retest reliability and scorer reliability coefficients of the M response. It can be readily seen that both correlations are extremely high, leaving little doubt as to the reliability of the M response.

Table III.-

Reliability Coefficients of the M Response on the Group Rorschach Test.

Reliability	r N:30
Test-retest	.947
Scorer	.989

2. Reliability of the Empathy Scores.

The reliability of the empathy scores must also not be overlooked. A consistency in the predictions made by the observers should be expected if this study is to have meaning. Since the empathy score is derived from a comparison of the Observer's predicted scores and the Subject's score reliability of the last two measures is naturally implied if the empathy scores are reliable.

From Table IV it is apparent that a stability does exist. The lowest reported correlation is .731 and the highest is .930. In general the coefficients are somewhat higher with the Study of Values than for the P-F Study. This finding is in agreement with results generally reported. The correlation with the P-F Study is actually of a higher order than normally obtained,[1] suggesting that the simplified scoring system utilized in this project achieved its purpose. The reliability coefficients of the Study of Values test are in line with those reported by Allport.[2]

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1 Esther Lee Mirmow, "The Rosenzweig Picture-Frustration Study", p. 209-221, in Daniel Brower and Lawrence E. Abt (eds.), Progress in Clinical Psychology, Grune and Stratton, New York, 1952, p. xi-328.

2 Gordon W. Allport, Philip E. Vernon, and Gardner Lindzey, Study of Values: Manual, Houghton Mifflin, Boston, 1961, 19 p.

Table IV.-

Test-Retest Reliability Coefficients of the Empathy Scores Obtained on the Two Tests.

Test	Subject	r N:30
P-F Study	A	.816
	B	.719
	C	.858
Study of Values	A	.930
	B	.731
	C	.894

No outstanding pattern with the correlations is noticeable, aside from the fact that the predictions for Subject B appear to be least reliable. On the whole, however, most of the coefficients are high enough to indicate that the empathy scores are adequately reliable.

3. Empathy Scores of the High and Low M Groups.

The main findings of this study are presented in Table V. This table shows the mean empathy scores of the low and high M groups. The significance of the differences in terms of t is also provided.

Probably the most noticeable feature of the findings is the fact that in every case the empathy scores for the high M group exceeded the scores for the low M group. Only in three cases, however, is the value of t significant. Significant differences in favor of the high M group were obtained for Subjects A and C on the P-F Study at the .01 level and Subject B on the Study of Values at the .02 level.

The foregoing results lead to a rejection of the null hypothesis. In accordance with the theories of Rorschach,[3] Klopfer[4] and others, the high M group, at least

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3 H. Rorschach, Psychodiagnostics, Grune and Stratton, New York, 1942, 226 p.

4 B. Klopfer, Mary D. Ainsworth, W.G. Klopfer and R.R. Holt, Developments in Rorschach Technique, Yonkers, World Book Co., 1954, x-726 p.

Table V.-

Comparison of the Mean Empathy Scores Obtained on the Two Tests by the High and Low M Groups and the Significance of the Differences Expressed in Values of t.

Test	Subject	Mean Empathy Score		t
		High M	Low M	
P-F Study	A	14.71	12.75	2.800[a]
	B	12.76	12.68	.172
	C	15.21	12.75	2.763[a]
Study of Values	A	18.14	18.06	.074
	B	17.07		2.741[b]
	C	18.35		.579

a Significant at the .01 level.
b Significant at the .02 level.

in half the cases, displayed significantly greater empathic ability than did the low M group.

A further analysis of the data indicates that on the whole the differences in mean empathy scores were more significant on the P-F Study than on the Study of Values. It is possible that the nature of the two tests may have played a role. The scoring of the responses on the P-F Study entails an emotional component, viz., direction of aggression. In making a correct prediction, it calls for an appreciation of the particular S's emotional responsivity to situations. It is the grasping of S's emotion predisposition that would most aid empathic prediction here. This type of response seems closely allied to the meaning of empathy as postulated by most authors.[5] Prediction on the Study of Values on the other hand is based not so much on how S says things but on what was said during the interview. There is less emotional involvement and prediction is probably based primarily on drawing further inferences from the content of the interview. It may, therefore, be that the empathy, in which the high M group surpasses the low M group is of the former variety, encompassing emotional aspects and hence for this reason discrepancies between the two groups were most evident on the P-F Study.

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5 Orlo Strunk, "Empathy: A Review of Theory and Research", in Psychological Newsletter, Vol. 9, No. 2, 1957, p. 47-57.

The fact that the P-F Study is a projective test and the Study of Values is an objective test may also have accounted for the differences in the results obtained with the two tests. The replies to the latter scale were more likely to be screened and hence some Ss may not have given a true representation of themselves. Since the P-F Study is a projective instrument and the scoring system was unknown, responses were less subject to conscious control.

Why, the reader may ask, was not a significant difference obtained with Subject B on the P-F Study? One possible explanation may be within the subject himself. Many of the Os characterized B's behaviour during the interview as superficial. Perhaps it was this feature which prevented the observers from gaining a well grounded impression of him. This explanation seems at least partly plausible if one refers back to Table IV on page 50. It was pointed out in the previous section that the reliability of the empathy scores was lowest for Subject B. Thus it might well be that the high M group, not having obtained a firm impression of B, was more indecisive about its predictions than normally, and predicted less well. In fact, for both groups the empathy scores for B were the lowest of the three subjects.

A surprising feature of the results is the fact that on the Study of Values, B was the only subject whose performance

was significantly better predicted by the high M group than by the low M group. It is rather difficult to explain this finding, but it may have resulted from the nature of the information supplied by B during the interview.

In addition to the tests and subjects, other variables may account for the incomplete superiority of the high M group with regard to empathy. The smallness of the sample may have contributed. Using a larger group, significant differences might have occurred in more instances although some of the discrepancies were so minute that it appears highly unlikely that a significant result would be obtained by merely using a larger sample.

The length of the interview also might have influenced the results. Dymond's[6] procedure allowed the empathizers to be associated with the subjects of empathy for a considerably longer period of time before they were asked to make predictions. However, the procedure is somewhat laborious and for this reason a ten minute interview was adopted following the procedure of Gage.[7] A longer interview might have promoted better acquaintance of S by the Os and may have resulted

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6 Rosalind F. Dymond, "A Scale for the Measurement of Empathic Ability", in Journal of Consulting Psychology, Vol. 13, No. 2, 1949, p. 127-133.

7 N.L. Gage, "Judging Interests from Expressive Behaviour", in Psychological Monographs, Vol. 66, No. 18, 1952, p. 1-20.

in more numerous significant differences between the two groups.

At any rate, on the basis of the findings obtained, the null hypothesis was rejected. The nature of the empathic process will be dealt with in the next three sections. Projection will be discussed first.

4. Projection Scores of the High and Low M Groups.

Having established the fact that the high M group yielded higher empathy scores than the low M group, the nature of the empathic process will now be investigated.

It will be recalled that the concepts of projection and empathy have been attributed similar meanings by many psychologists.[8] In addition, Bender and Hastorf[9] have pointed out that much of what is termed empathy is really projection and they attempted to devise a scoring system to eliminate the projection involved.

It is therefore of utmost importance to consider the role of projection in the present study and to determine if the high and low M groups differ in their mean projection

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8 Strunk, Op. Cit., p. 47-57.

9 A.H. Hastorf and I.E. Bender, "A Caution Respecting the Measurement of Empathic Ability", in Journal of Abnormal and Social Psychology, Supplement, Vol. 47, No. 2, issue of April 1952, p. 574-576.

scores. As previously mentioned, projection scores were obtained by comparing each O's own performance with his prediction for each S, in this way giving an indication of the degree to which each O ascribed his responses to others. From Table VI it is apparent that only the projection score for subject A on the P-F Study was significantly in favour of the high M group. In all other cases, no significant difference in projection scores between the two groups was obtained.

Since the empathy scores of the high M group significantly exceeded the scores of the low M group, not only for subject A but also for subject C on the P-F Study as well as for subject B on the Study of Values, it would appear that projection is not an essential element of the empathic process under consideration in this study, although of course conclusions cannot be generalized to all measures of empathy.

The significant discrepancy in the projection score between the high and low M groups for Subject A on the P-F Study has a plausible interpretation. This outcome may have arisen because of the high degree of similarity between the high M group's own responses and those of Subject A. Naturally in this case, a relatively greater amount of projection would be required for accurate prediction.

Table VI.-

Comparison of the Mean Projection Scores Obtained on the Two Tests by the High and Low M Groups and the Significance of the Differences Expressed in Values of t.

Test	Subject	Mean Projection Score		t
		High M	Low M	
P-F Study	A	17.64	13.68	6.000[a]
	B	14.85	13.37	1.591
	C	15.21	13.87	1.634
Study of Values	A	19.00	19.18	.139
	B	17.85	18.56	.601
	C	18.85	18.12	.657

a Significant at .01 level.

The influence of similarity between the observers and the subjects will be discussed next.

5. Similarity Scores of the Low and High M Groups.

The similarity scores are derived from a comparison of each O's own performance with the performance of the particular S. Table VII presents the mean similarity scores for both groups. The pattern of these scores strongly resembles that of the projection scores in Table VI. Once again, a significant discrepancy in favor of the high M group was found only for subject A on the P-F Study. Following the line of reasoning of the previous section, similarity between empathizer and subject of empathy does not seem to be essential for high empathic ability since significantly larger empathy scores were attained by the high M group with Ss who were not any more similar to this group than they were to the low M group.

It appears now that the reason why the mean projection score for subject A on the P-F Study was significantly larger for the high M group than for the low M group, likely stems from the significant discrepancy in similarity scores between the two groups in the same situation. Since subject A was more similar to the high M group than to the low M group with regard to his responses on the P-F Study, it is not

Table VII.-

Comparison of the Mean Similarity Scores Obtained on the Two Tests by the High and Low M Groups and the Significance of the Differences Expressed in Values of t.

Test	Subject	Mean Similarity Scores		t
		High M	Low M	
P-F Study	A	15.64	13.37	3.289[a]
	B	14.28	13.50	.876
	C	14.35	12.93	1.632
Study of Values	A	17.35	17.25	.099
	B	14.50	14.25	.245
	C	16.21	17.12	1.151

[a] Significant at .01 level.

surprising that the former group employed more projection, since in this case mere projection resulted in an increase in the empathy score.

A closer comparison of Table VI and Table VII appears to indicate a consistent positive relationship between the mean similarity scores and the mean projection scores for the high M group. For this reason, the relationship between projection and similarity for the two groups will be explored in the following section.

6. The Relationship Between Projection and Similarity.

Table VIII portrays the correlations between the mean projection scores and the mean similarity scores for the high and low M groups. It is apparent that the correlations for the high M group on both tests are positive and extremely high. While it is true that N is only three, the correlations obtained exceed .707, which is the highest value expected by chance. For the low M group, the correlation is significant but negative on the P-F Study and negligible on the Study of Values.

It is little wonder that the low M group displayed poor empathy. The large negative correlation in the case of the P-F Study implies that this group projected more as the similarity between it and the subject decreased and vice

Table VIII.-

Correlations Between the Mean Similarity Scores and the Mean Projection Scores for the High and Low M Groups on the Two Tests.

Test	r M:S	
	High M	Low M
P-F Study	.998	-.976
Study of Values	.966	.126

versa, a characteristic which necessarily contraindicates good empathy. With the Study of Values no significant relationship between similarity and projection occurred.

On the other hand, the marked correlations obtained with the high M group have important implications. They indicate that the amount of projection the group uses is proportionate to the degree of similarity between it and the subject. Haphazard guessing is not suggested but rather a truly empathic process is implied. One possible interpretation is that the high M group actually gauges its prediction in terms of the degree of similarity between it and the subject. Applying this principle to the individual, the secret of good empathy would thus be the employment of oneself as a guide in assessing the similarity between the self and the subject of empathy and then projecting or not projecting as the case may be. Although this is only one possible explanation and caution must be exercised in applying findings for a group to the individual, this should be an interesting area for further research.

The foregoing results are somewhat in variance with Rorschach's[10] concept of empathy. In discussing the relationship between M and empathy, Rorschach stated that

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10 Rorschach, Op. Cit., 226 p.

genuine empathy is truly possible only where there exists a similarity between theempathizer and the subject of empathy, Taft[11] also points out the importance of the similarity to the subject, implying that empathy is largely projection.

While it may be true that it is easier to empathize when there is a similarity between the participants of the empathic relationship, since mere projection of one's own behaviour would be involved, such is not the essence of the empathic quality which distinguishes the high M group from the low M group in this project. The empathic process involved here appears to be of a higher level. The high M group surpasses the low M group not in simply projecting its own behaviour, but in stepping outside its own boundary and gaining an appreciation of the personal feelings and attitudes of the subject.

7. The Role of Intelligence in Empathy.

It was pointed out in Chapter II that while age, sex and education were comparable for the low and high M groups, the latter group did attain a higher mean I.Q. rating on the Otis test. It is important therefore to determine whether a relationship between intelligence and empathy exists.

Table IX reveals the correlations between the Otis I.Q. and empathy scores for the entire sample. It is

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11 Taft, Op. Cit., p. 1-23.

Table IX.-

Correlations Between Otis I.Q. and Empathy Scores on the Two Tests for the Sample.

Test	Subject	r N:30
P-F Study	A	.331
	B	.259
	C	.308
Study of Values	A	.441
	B	.186
	C	.157

evident that while in each instance the correlation is quite low, five of the correlations exceed .185 which is the highest value expected by chance. It would appear, hence, that intelligence does play a positive role in the empathic process. This finding is not surprising in view of the reported correlations between M and intelligence.[12] However, because of the smallness of the correlations it is unlikely that intelligence is the chief factor accounting for the difference in empathic ability between the two groups.

For further research, this study could be repeated using a larger sample of observers and subjects and increasing the length of the interview to induce more significant results.

The relationship between similarity and projection in the empathic process is also a fruitful area for research and work along this line with emphasis on individual rather than on group performance should prove stimulating.

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12 William D. Altus and Grace Thompson Altus, "Rorschach Movement Variables and Verbal Intelligence", in Journal of Abnormal and Social Psychology, Supplement, Vol. 47, No. 2, 1952, p. 531-533.

SUMMARY AND CONCLUSIONS

This investigation was conducted in order to determine whether two groups of subjects differing in their quantitative production of human movement responses on the Rorschach test differed in empathic ability.

Following a review of the literature which brought out the theories and indirect experimental evidence associating empathy with the human movement response, the design of the study was elaborated with particular attention being paid to reliability. Subsequently the results of the study were presented and discussed.

The findings of this investigation led to a rejection of the null hypothesis which stated that two groups of students differing in their quantitative production of human movement or M responses on the Rorschach test show no significant difference in empathy.

The high M group exhibited a relative superiority over the low M group in empathic ability. Some elucidations as to nature of the empathic process were also divulged. Most notable was the finding that, contrary to many opinions, the empathic ability of the high M group in this study entailed not merely projection but involved a process in which projection was utilized in proportion to the degree of similarity between the group and the subject of empathy. Intelligence was found to play a minor role.

For purposes of further research, this study could be repeated after making two changes. The size of the sample should be increased and the length of time the subject of empathy is exposed to the empathizer should also be prolonged. The relationship between similarity and projection should also prove to be an interesting area of investigation in view of the present findings.

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APPENDIX 1

JOKES EMPLOYED IN THE INTERVIEW

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1. (a) Student: Sir, I don't think I deserve an absolute zero.
Professor: Neither do I, but its the lowest mark I can give.

   (b) "Let me write you a big insurance policy", urged the persistent salesman. "You might need it."
"Shut up", yelled the annoyed business man. "I've got so much insurance now that it makes me jealous every time I read about a funeral.

2. (a) Granddaughter: What kind of husband should I look for, Granny?
Grandma: Never mind the husbands, Jeannie, just look for a good reliable bachelor.

   (b) Social Worker: My dear woman, your child is spoiled.
Housewife: No indeed, All my kids smell that way.

APPENDIX 2

QUESTIONS ASKED DURING THE INTERVIEW

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1. What activities do you like most?
2. What activities do you dislike most?
3. What games and sports do you like most?
4. What games and sports do you dislike most?
5. What school subjects did you like most?
6. What school subjects did you dislike most?
7. What types of books do you like most?
8. What types of books do you dislike most?
9. What magazines do you prefer?
10. What newspapers do you read?
11. What occupation would you like?
12. What type of people do you like to be with?
13. What type of people do you dislike to be with?

APPENDIX 3

THE RAW DATA

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RAW DATA

Table X.-

Observers' Human Movement Response Scores.

Observer	1st Testing	2nd Testing
1.	0	0
2.	0	0
3.	0	0
4.	0	0
5.	1	2
6.	1	1
7.	1	1
8.	2	2
9.	2	2
10.	2	3
11.	2	3
12.	3	3
13.	3	3
14.	3	2
15.	3	3
16.	3	2
17.	4	5
18.	4	4
19.	5	5
20.	5	5
21.	5	4
22.	5	6
23.	6	4
24.	7	6
25.	8	10
26.	9	7
27.	10	7
28.	11	10
29.	11	8
30.	12	13

Table XI.-

Observers' Empathy, Projection and Similarity Scores
Subject A. (first testing)

Observer	P-F Study			Study of Values		
	E	P	S	E	P	S
1.	15	14	14	15	15	20
2.	13	14	14	17	15	17
3.	13	14	12	21	22	21
4.	15	14	14	18	20	17
5.	14	14	11	20	22	15
6.	11	12	13	17	16	16
7.	11	11	13	18	18	16
8.	13	14	11	18	24	16
9.	12	13	15	16	17	20
10.	8	13	16	18	16	20
11.	10	17	15	16	16	19
12.	17	15	10	21	19	17
13.	14	14	14	22	18	14
14.	13	14	14	19	26	17
15.	12	10	13	14	21	15
16.	13	16	15	21	22	16
17.	15	19	17	22	20	20
18.	15	17	15	17	19	16
19.	12	22	13	22	18	17
20.	16	17	13	19	20	22
21.	14	19	16	21	20	16
22.	17	17	17	19	15	20
23.	12	17	12	15	12	15
24.	17	19	18	14	19	20
25.	14	16	17	11	26	17
26.	14	20	17	22	25	23
27.	17	16	19	15	22	17
28.	13	14	15	17	17	17
29.	14	16	17	19	19	10
30.	16	18	13	21	14	13

Table XII.-

Observer's Empathy, Projection and Similarity Scores
Subject B. (first testing)

Observer	P-F Study			Study of Values		
	E	P	S	E	P	S
1.	13	16	11	19	15	12
2.	13	14	14	18	16	14
3.	12	14	10	16	16	15
4.	14	14	13	15	15	15
5.	12	11	10	19	19	17
6.	10	12	14	16	16	14
7.	11	13	13	16	16	9
8.	13	11	13	17	13	12
9.	11	14	12	21	25	14
10.	16	13	16	20	22	14
11.	14	17	16	15	18	15
12.	12	12	13	16	23	13
13.	12	14	19	16	20	16
14.	12	10	15	15	18	19
15.	12	11	10	14	22	15
16.	16	16	17	15	23	14
17.	13	18	14	15	15	10
18.	14	13	15	15	16	16
19.	9	14	14	16	18	14
20.	12	14	17	15	19	16
21.	14	16	12	18	20	16
22.	13	17	15	15	13	16
23.	11	9	8	17	20	15
24.	12	13	17	17	19	16
25.	13	14	14	16	16	14
26.	13	21	16	17	22	11
27.	13	14	16	14	13	9
28.	16	13	14	14	17	10
29.	13	18	15	16	22	20
30.	13	14	13	12	20	20

Table XIII.-

Observers' Empathy, Projection and Similarity Scores Subject C. (first testing)

Observer	P-F Study E	P	S	Study of Values E	P	S
1.	13	10	11	19	23	18
2.	11	10	16	16	17	15
3.	10	17	12	18	21	17
4.	14	15	13	9	17	13
5.	9	11	10	18	11	19
6.	12	12	14	12	16	15
7.	13	14	13	16	17	14
8.	17	16	11	19	13	14
9.	13	13	13	17	17	16
10.	14	17	14	23	18	18
11.	13	18	15	17	20	16
12.	11	14	8	20	19	21
13.	13	14	13	24	20	18
14.	17	13	14	21	21	19
15.	9	13	11	19	20	21
16.	15	15	17	14	20	20
17.	14	15	13	21	21	16
18.	16	13	11	16	18	17
19.	12	17	10	20	22	17
20.	15	15	17	17	21	16
21.	15	17	20	20	18	20
22.	14	16	16	16	12	14
23.	13	14	10	11	16	15
24.	16	15	16	17	16	17
25.	16	16	15	22	18	15
26.	21	15	14	24	22	17
27.	18	13	17	18	21	19
28.	14	16	14	18	17	15
29.	16	20	15	18	24	14
30.	13	11	17	19	18	15

Table XIV.-

Empathy Scores of the Observers for Subjects A, B, and C. (second testing)

Observer	P-F study			Study of Values		
	A	B	C	A	B	C
1.	13	17	11	12	15	18
2.	13	14	11	17	15	16
3.	13	12	10	22	13	21
4.	15	13	14	18	14	12
5.	15	13	10	20	18	18
6.	11	11	11	17	14	12
7.	11	11	13	16	17	16
8.	14	13	14	19	19	19
9.	11	14	12	18	14	18
10.	10	17	12	19	17	25
11.	10	14	13	16	15	18
12.	16	13	10	20	16	23
13.	16	14	14	20	14	24
14.	15	15	17	18	16	20
15.	14	14	7	15	16	18
16.	15	16	14	21	16	16
17.	16	16	12	20	14	21
18.	15	15	12	17	16	15
19.	14	11	13	20	16	18
20.	20	14	14	19	14	20
21.	15	16	15	16	20	20
22.	17	14	15	18	20	19
23.	15	11	14	16	17	12
24.	16	15	14	14	16	19
25.	15	14	13	14	16	22
26.	15	14	21	23	16	24
27.	16	16	16	13	19	15
28.	14	16	13	19	15	18
29.	15	13	14	19	18	18
30.	16	16	14	23	20	18

APPENDIX 4

ABSTRACT OF

An Investigation of the Relationship between Empathy and the Human Movement Response on the Rorschach Test.

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An Investigation of the Relationship between Empathy and the Human Movement Response on the Rorschach Test[1]

The literature reveals that numerous theorists have implied an association between the human movement response on the Rorschach test and empathy, but there is a lack of experimental evidence to support such views. This dissertation has been concerned with the aforementioned relationship. The problem was to study the relationship between empathy and the human movement response by determining whether two groups of students differing in their quantitative production of human movement responses differ in empathy.

For this study, empathy was operationally defined as the number of correct responses on two tests that can be anticipated by an observer for a given subject after exposure to an interview involving that subject.

The Rosenzweig Picture-Frustration Study and the Study of Values were selected as the tests on which the empathizers were to make their predictions.

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1 Ivan Stephen Bilash, doctoral thesis presented to the School of Psychology and Education of the University of Ottawa, Ontario, October 1962, vii-79 p.

The findings resulted in a rejection of the null hypothesis which stated that two groups of students differing in their quantitative production of human movement or M responses on the Rorschach test will show no significant differences in empathy. Furthermore, unlike the low M group, the high M group exhibited a positive correlation between the amount of projection used and the degree of similarity between it and the subject of empathy. Intelligence was found to play a minor role in the empathic process.